

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 3220-75156	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2004/014097	International filing date (day/month/year) 06/05/2004	(Earliest) Priority Date (day/month/year) 06/05/2003
Applicant PURDUE RESEARCH FOUNDATION		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☒ Unity of invention is lacking (see Box III).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

TREATMENT OF LUPUS TARGETING THE MACROPHAGES OR THE FOLATE RECEPTOR

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 3

☒ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

- b. ☐ none of the figures is to be published with the abstract.

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3 in part, and 5

Use of a conjugate as claimed in the manufacture of a medicament for treating lupus erythematosus, wherein the group L is a folate, and group X is an immunogen.

2. claims: 1-3 in part, and 6-7

Use of a conjugate as claimed in the manufacture of a medicament for treating lupus erythematosus, wherein the group L is a folate, and group X is a cytotoxin.

3. claims: 1-3 in part, and 8

Use of a conjugate as claimed in the manufacture of a medicament for treating lupus erythematosus, wherein the group L is a folate, and group X is a cytokine.

4. claims: 1 in part, and 4

Use of a conjugate as claimed in the manufacture of a medicament for treating lupus erythematosus, wherein the group L is an antibody or an antibody fragment.

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International Application No

PCT/US2004/014097

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K47/48 A61P37/00 A61K51/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, EMBASE, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/087424 A (TURK MARY JO ; LOW PHILIP STEWART (US)) 7 November 2002 (2002-11-07) page 1 figure 4; examples 1-8,11 -----	1-8
X	WO 99/41285 A (MEDAREX INC) 19 August 1999 (1999-08-19) page 48, line 3 - line 23 examples iI,II,IV,VI -----	1,4
X	WO 96/36367 A (PURDUE RESEARCH FOUNDATION) 21 November 1996 (1996-11-21) examples claims ----- -/--	1-3,5-8

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

11 November 2004

Date of mailing of the international search report

19. 11. 2004

Name and mailing address of the ISA

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International Application No

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>REDDY J A ET AL: "FOLATE-MEDIATED TARGETING OF THERAPEUTIC AND IMAGING AGENTS TO CANCERS"</p> <p>CRITICAL REVIEWS IN THERAPEUTIC DRUG CARRIER SYSTEMS,</p> <p>vol. 15, no. 6, 1998, pages 587-627, XP000901554</p> <p>ISSN: 0743-4863</p> <p>abstract</p> <p>page 594, paragraph V - page 602; table 4</p> <p>-----</p>	1-3,5-8
X	<p>WO 01/74382 A (PURDUE RESEARCH FOUNDATION)</p> <p>11 October 2001 (2001-10-11)</p> <p>examples</p> <p>-----</p>	1-8
X	<p>NAKASHIMA-MATSUSHITA N ET AL: "Selective expression of folate receptor beta and its possible role in methotrexate transport in synovial macrophages from patients with rheumatoid arthritis"</p> <p>ARTHRITIS AND RHEUMATISM; LIPPINCOTT, PHILADELPHIA, US,</p> <p>vol. 42, no. 8, August 1999 (1999-08), pages 1609-1616, XP002284073</p> <p>ISSN: 0004-3591</p> <p>abstract</p> <p>-----</p>	1-3,5-8
X	<p>TURK M J ET AL: "Folate-targeted imaging of activated macrophages in rats with adjuvant-induced arthritis"</p> <p>ARTHRITIS AND RHEUMATISM, LIPPINCOTT, PHILADELPHIA, US,</p> <p>vol. 46, no. 7, July 2002 (2002-07), pages 1947-1955, XP004536129</p> <p>ISSN: 0004-3591</p> <p>the whole document</p> <p>-----</p>	1-3,5-8
X	<p>WO 98/58678 A (DEN HARTOG MARCEL THEODORUS ; BOER MARK DE (NL); PANGENETICS B V (NL))</p> <p>30 December 1998 (1998-12-30)</p> <p>page 3</p> <p>examples</p> <p>claims 14-16</p> <p>-----</p>	1,4
P,X	<p>WO 03/092742 A (LEAMON CHRISTOPHER PAUL ; ENDOCYTE INC (US); PARKER MATTHEW A (US))</p> <p>13 November 2003 (2003-11-13)</p> <p>cited in the application</p> <p>example 3</p> <p>-----</p>	1-3,5-8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/014097

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 02087424	A	07-11-2002	CA 2445826 A1 EP 1390077 A2 HU 0401127 A2 JP 2004530678 T NO 20034855 A NZ 529808 A WO 02087424 A2 US 2002192157 A1	07-11-2002 25-02-2004 28-09-2004 07-10-2004 19-12-2003 19-12-2003 07-11-2002 19-12-2002
WO 9941285	A	19-08-1999	AU 2772199 A CA 2321136 A1 CN 1307590 T EP 1056781 A1 HU 0100929 A2 JP 2002503676 T NO 20004098 A PL 342729 A1 SI 20475 A WO 9941285 A1 US 2002058284 A1 US 2004141967 A1	30-08-1999 19-08-1999 08-08-2001 06-12-2000 28-06-2001 05-02-2002 02-10-2000 02-07-2001 31-08-2001 19-08-1999 16-05-2002 22-07-2004
WO 9636367	A	21-11-1996	US 5688488 A AU 5921196 A CA 2220008 A1 EP 0825878 A1 JP 11510787 T WO 9636367 A1	18-11-1997 29-11-1996 21-11-1996 04-03-1998 21-09-1999 21-11-1996
WO 0174382	A	11-10-2001	AU 5697001 A BR 0109704 A CA 2405299 A1 CN 1441676 T CZ 20023240 A3 EP 1267918 A1 HR 20020787 A2 HU 0300421 A2 JP 2003528924 T MX PA02009454 A NO 20024577 A PL 357943 A1 SK 13962002 A3 WO 0174382 A1 US 2001031252 A1 ZA 200207768 A	15-10-2001 29-04-2003 11-10-2001 10-09-2003 15-10-2003 02-01-2003 29-02-2004 28-06-2003 30-09-2003 10-04-2003 05-11-2002 09-08-2004 03-02-2004 11-10-2001 18-10-2001 10-02-2004
WO 9858678	A	30-12-1998	AT 211394 T AU 8132998 A CA 2294223 A1 DE 69803392 D1 EP 1005372 A1 JP 2002507967 T WO 9858678 A1 US 6645494 B1	15-01-2002 04-01-1999 30-12-1998 28-02-2002 07-06-2000 12-03-2002 30-12-1998 11-11-2003
WO 03092742	A	13-11-2003	WO 03092742 A1 US 2004033195 A1	13-11-2003 19-02-2004